

SEQUENCE LISTING

<110> E. I. du Pont de Nemours and Company

<120> Flavonoid Biosynthetic Enzymes

<130> BB1324

<140>

<141>

<150> 60/113,190

<151> 1998-12-21

<160> 6

<170> Microsoft Office 97

<210> 1

<211> 1859

<212> DNA

<213> Glycine max

<400> 1

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<210> 2

<211> 499

<212> PRT

<213> Glycine max

<400> 2

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 Gly Pro Pro Pro Leu Pro Ile Ile Gly Asn Leu Asn Leu Leu Glu Gln
 35 40 45
 Pro Ile His Arg Phe Phe Gln Arg Met Ser Lys Gln Tyr Gly Asn Val
 50 55 60
 Val Ser Leu Trp Phe Gly Ser Arg Leu Ala Val Val Ile Ser Ser Pro
 65 70 75 80
 Thr Ala Tyr Gln Glu Cys Phe Thr Lys His Asp Val Ala Leu Ala Asn
 85 90 95
 Arg Leu Pro Ser Leu Ser Gly Lys Tyr Ile Phe Tyr Asn Asn Thr Thr
 100 105 110
 Val Gly Ser Cys Ser His Gly Glu His Trp Arg Asn Leu Arg Arg Ile
 115 120 125
 Thr Ala Leu Asp Val Leu Ser Thr Gln Arg Val His Ser Phe Ser Gly
 130 135 140
 Ile Arg Ser Asp Glu Thr Lys Arg Leu Met Gln Arg Leu Val Leu Ala
 145 150 155 160
 Lys Asn Ser Asn Glu Glu Glu Phe Ala Arg Val Glu Ile Ser Ser Met
 165 170 175
 Phe Asn Asp Leu Thr Tyr Asn Asn Ile Met Arg Met Ile Ser Gly Lys
 180 185 190
 Arg Phe Tyr Gly Glu Glu Ser Glu Met Lys Asn Val Glu Glu Ala Arg
 195 200 205
 Glu Phe Arg Glu Thr Val Thr Glu Met Leu Glu Leu Met Gly Leu Ala
 210 215 220
 Asn Lys Gly Asp His Leu Pro Phe Leu Arg Trp Phe Asp Phe Gln Asn
 225 230 235 240
 Val Glu Lys Arg Leu Lys Ser Ile Ser Lys Arg Tyr Asp Ser Ile Leu
 245 250 255
 Asn Lys Ile Leu His Glu Asn Arg Ala Ser Asn Asp Arg Gln Asn Ser
 260 265 270
 Met Ile Asp His Leu Leu Lys Leu Gln Glu Thr Gln Pro Gln Tyr Tyr
 275 280 285
 Thr Asp Gln Ile Ile Lys Gly Leu Ala Leu Ala Met Leu Phe Gly Gly
 290 295 300

Thr Asp Ser Ser Thr Gly Thr Leu Glu Trp Ser Leu Ser Asn Leu Leu
 305 310 315 320
 Asn His Pro Glu Val Leu Lys Lys Ala Arg Asp Glu Leu Asp Thr Gln
 325 330 335
 Val Gly Gln Asp Arg Leu Leu Asn Glu Ser Asp Leu Pro Lys Leu Pro
 340 345 350
 Tyr Leu Arg Lys Ile Ile Leu Glu Thr Leu Arg Leu Tyr Pro Pro Ala
 355 360 365
 Pro Ile Leu Ile Pro His Val Ser Ser Glu Asp Ile Thr Ile Glu Gly
 370 375 380
 Phe Asn Ile Pro Arg Asp Thr Ile Val Ile Ile Asn Gly Trp Gly Met
 385 390 395 400
 Gln Arg Asp Pro Gln Leu Trp Asn Asp Ala Thr Cys Phe Lys Pro Glu
 405 410 415
 Arg Phe Asp Val Glu Gly Glu Glu Lys Lys Leu Val Ala Phe Gly Met
 420 425 430
 Gly Arg Arg Ala Cys Pro Gly Glu Pro Met Ala Met Gln Ser Val Ser
 435 440 445
 Phe Thr Leu Gly Leu Leu Ile Gln Cys Phe Asp Trp Lys Arg Val Ser
 450 455 460
 Glu Glu Lys Leu Asp Met Thr Glu Asn Asn Trp Ile Thr Leu Ser Arg
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 Leu Ile Pro Leu Glu Ala Met Cys Lys Ala Arg Pro Leu Ala Thr Lys
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<210> 3
 <211> 1698
 <212> DNA
 <213> Glycine max

<400> 3
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 ctcttcctat aatcggaac cttaacctcg ttgaacaacc tatacaccgt ttcttccacc 180
 gcatgtccca aaaatatgga aacatcatat ccttttggtt tgggtcacgt cttgttgttg 240
 ttgtttcatc acccacagcg taccaagaat gtttcaccaa acatgatgtt accttgcca 300
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 agaacgtgga gaagaggttg aagaatatca gtaagaggta tgataccatc ttgaataaga 780
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 aactgcaaga gacacagcct gactattata ccgaccaaact catcaaaggc cttgctttgg 900

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ataaatttct ttactttc 1698

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<210> 4
 <211> 494
 <212> PRT
 <213> Glycine max

<400> 4
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 Pro Leu Pro Ile Ile Gly Asn Leu Asn Leu Val Glu Gln Pro Ile His
 35 40 45
 Arg Phe Phe His Arg Met Ser Gln Lys Tyr Gly Asn Ile Ile Ser Leu
 50 55 60
 Trp Phe Gly Ser Arg Leu Val Val Val Val Ser Ser Pro Thr Ala Tyr
 65 70 75 80
 Gln Glu Cys Phe Thr Lys His Asp Val Thr Leu Ala Asn Arg Val Arg
 85 90 95
 Ser Leu Ser Gly Lys Tyr Ile Phe Tyr Asp Asn Thr Thr Val Gly Ser
 100 105 110
 Cys Ser His Gly Glu His Trp Arg Asn Leu Arg Arg Ile Thr Ser Leu
 115 120 125
 Asp Val Leu Ser Thr Gln Arg Val His Ser Phe Ser Gly Ile Arg Ser
 130 135 140
 Asp Glu Thr Lys Arg Leu Ile His Arg Leu Ala Arg Asp Ser Gly Lys
 145 150 155 160
 Asp Phe Ala Arg Val Glu Met Thr Ser Lys Phe Ala Asp Leu Thr Tyr
 165 170 175
 Asn Asn Ile Met Arg Met Ile Ser Gly Lys Arg Phe Tyr Gly Glu Glu
 180 185 190
 Ser Glu Leu Asn Asn Val Glu Glu Ala Lys Glu Phe Arg Asp Thr Val
 195 200 205

Asn Glu Met Leu Gln Leu Met Gly Leu Ala Asn Lys Gly Asp His Leu
 210 215 220
 Pro Phe Leu Arg Trp Phe Asp Phe Gln Asn Val Glu Lys Arg Leu Lys
 225 230 235 240
 Asn Ile Ser Lys Arg Tyr Asp Thr Ile Leu Asn Lys Ile Leu Asp Glu
 245 250 255
 Asn Arg Asn Asn Lys Asp Arg Glu Asn Ser Met Ile Gly His Leu Leu
 260 265 270
 Lys Leu Gln Glu Thr Gln Pro Asp Tyr Tyr Thr Asp Gln Ile Ile Lys
 275 280 285
 Gly Leu Ala Leu Ala Met Leu Phe Gly Gly Thr Asp Ser Ser Thr Gly
 290 295 300
 Thr Leu Glu Trp Ala Leu Ser Asn Leu Val Asn Asp Pro Glu Val Leu
 305 310 315 320
 Gln Lys Ala Arg Asp Glu Leu Asp Ala Gln Val Gly Pro Asp Arg Leu
 325 330 335
 Leu Asn Glu Ser Asp Leu Pro Lys Leu Pro Tyr Leu Arg Lys Ile Val
 340 345 350
 Leu Glu Thr Leu Arg Leu Tyr Pro Pro Ala Pro Ile Leu Ile Pro His
 355 360 365
 Val Ala Ser Glu Asp Ile Asn Ile Glu Gly Phe Asn Val Pro Arg Asp
 370 375 380
 Thr Ile Val Ile Ile Asn Gly Trp Ala Met Gln Arg Asp Pro Lys Ile
 385 390 395 400
 Trp Lys Asp Ala Thr Ser Phe Lys Pro Glu Arg Phe Asp Glu Glu Gly
 405 410 415
 Glu Glu Lys Lys Leu Val Ala Phe Gly Met Gly Arg Arg Ala Cys Pro
 420 425 430
 Gly Glu Pro Met Ala Met Gln Ser Val Ser Tyr Thr Leu Gly Leu Met
 435 440 445
 Ile Gln Cys Phe Asp Trp Lys Arg Val Ser Glu Lys Lys Leu Asp Met
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<210> 5
 <211> 843
 <212> DNA
 <213> Glycine max

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<220>
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<220>
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<220>
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 <222> (843)

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<210> 6
 <211> 141
 <212> PRT
 <213> Glycine max

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 20 25 30
 Ile Ile Gly Asn Leu His Gln Leu Lys Gln Pro Leu His Arg Thr Phe
 35 40 45
 His Ala Leu Ser Gln Lys Tyr Gly Pro Ile Phe Ser Leu Trp Phe Gly
 50 55 60

Ser Arg Phe Val Val Val Val Ser Ser Pro Leu Ala Val Gln Glu Cys
65 70 75 80

Phe Thr Lys Asn Asp Ile Val Leu Ala Asn Arg Pro His Phe Leu Thr
85 90 95

Gly Lys Tyr Ile Gly Tyr Asn Asn Thr Thr Val Ala Val Ser Pro Tyr
100 105 110

Gly Asp His Trp Arg Asn Leu Arg Arg Ile Met Ala Leu Glu Val Leu
115 120 125

Ser Thr His Arg Ile Asn Ser Phe Leu Glu Asn Arg Arg
130 135 140